

ABSTRACT

The present invention relates to a process for the production of poly (hydroxy fatty acids) as well as recombinant bacterial strains for carrying out the process. In addition, new poly(hydroxy fatty acids) and new substrates for the production of conventional and new poly(hydroxy fatty acids) are described. Moreover, the invention also relates to a DNA fragment, which codes for a PhaE and a PhaC component of the poly(hydroxy fatty acid) synthase from *Thiocapsa pfennigii*, as well as the corresponding poly (hydroxy fatty acid) synthase protein.